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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/656,085	09/06/2000	Jerome Cros	2809.1	8870
5514	7590	07/23/2004	EXAMINER	
FITZPATRICK CELLA HARPER & SCINTO 30 ROCKEFELLER PLAZA NEW YORK, NY 10112			TAMAI, KARL I	
			ART UNIT	PAPER NUMBER
			2834	

DATE MAILED: 07/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/656,085

Applicant(s)

CROS ET AL.

Examiner

Tamai IE Karl

Art Unit

2834

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 and 15-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 and 15-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claims 1, 3, 4, 27, and 28 are rejected under 35 U.S.C. 102(a) as being anticipated by Takahashi et al. (Takahashi) (JP 11-341755). Takahashi teaches two non-overlapping coils around each of the 5 rotor poles. Takahashi teaches a stator with an armature magnet 17 (inherently 2P); an armature core (inherently ferromagnetic) having a number slots 20 and a number of teeth 21 separated from the stator core by an airgap; a commutator 22 with a number of segments greater than the number of rotor slots S, a concentrated winding rotor having a plurality of simple non-overlapping coils 24, 25 of insulated wire mounted on the same rotor tooth, with each coil wound around a single tooth only and with a terminal of each of the coils being connected to different segments of the commutator 22 (see figure 6). Takahashi teaches the use of equalizers to reduce the number of brushes needed.

Claims 1, 3, 4, 27, and 28 are rejected under 35 U.S.C. 102(c) as anticipated by Takahashi (as set forth above) or, in the alternative, under 35 U.S.C. 103(a) as obvious over Takahashi in view of Shiraki et al. (US 4876472). Takahashi teaches every aspect of the invention. The examiner maintains that the stator having 2P poles and the rotor core being ferromagnetic is inherently in Takahashi, but for the sake of thoroughness a

Art Unit: 2834

second rejection based on Shiraki showing that permanent magnet stator motors having ferromagnetic cores and 2P magnets to provide high torque at low speeds. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Takahashi with a ferromagnetic rotor core and 2P poles on the stator to provide a high torque, low speed motor, as taught by Shiraki. The examiner notes the 35 USC 103 rejections are made over both Takahashi alone and over the combination of Takahashi and Shiraki, as set forth below.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Art Unit: 2834

5. Claims 2, 15, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (and Shiraki), in further view of Ward (US 5,121,021). Takahashi teaches every aspect of the invention except the motor having a permanent magnet stator with a magnetic core and the magnetic circuit having a metal powder. Ward teaches a permanent magnet motor with a soft magnetic core for supporting permanent magnets. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Takahashi with the permanent magnet stator of Ward to provide a field magnet for the motor with reduce eddy current losses.

6. Claims 16 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (and Shiraki) and Ward, in further view of Wong et al. (Wong) (US 5,304,885). Takahashi and Ward teach every aspect of the invention except the center part of the rotor/stator teeth having rounded edges. Wong teaches rotor poles with rounded edges. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Takahashi and Ward with rounded edges on the rotor poles because Wong teaches rounded edges improves airflow and prevents carbon dust build up.

7. Claims 17-19 and 23-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (and Shiraki) and Ward, in further view of Case et al. (Case) (US 3,095,515). Takahashi and Ward teach every aspect of the invention, except the poles having the same axial length as the coil with the tips being axially

Art Unit: 2834

longer, and the commutator extending under the tips. Case teaches the tips 48, 50 axially longer than the poles with the commutator 54 extending under the tips to allow for electrical connection with the coils. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Takahashi and Ward with the commutator and poles of Case to provide a small motor.

8. Claims 20 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takahashi (and Shiraki) and Ward, in further view of Katagiri (US 5,949,172). Takahashi and Ward teach every aspect of the invention, except the skew pole tips on unskewed teeth. Katagiri teaches skewed pole tips in figures 10a and 10b on unskewed teeth. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the motor of Takahashi and Ward with the commutator and poles of skewed poles of Katagiri to prevent cogging.

Response to Arguments

9. Applicant's arguments with respect to claims 1-4 and 15-28 is moot in view of the new grounds of rejection. The Applicant's argument that the coils 24 and 25 are connected to a common connection point on the commutator is not persuasive because the claim requires on one of the terminals to be connected to a different connection point, not both terminals. The coils 24 and 25 have a terminal connected to different commutator segments, which is clearly met by Takahashi because coil 24 has a terminal connected to commutator segment 9 and coil 25 has a terminal connected to commutator segment 5. The rejection is proper and maintained.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (571) 272-2036.

The examiner can be normally contacted on Monday through Friday from 8:00 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Darren Schuberg, can be reached at (571) 272 - 2044. The facsimile number for the Group is (703) 872 - 9306.

Art Unit: 2834

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Karl I Tamai
PRIMARY PATENT EXAMINER
July 21, 2004



KARL TAMAI
PRIMARY EXAMINER